

Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: EOG Resources, Inc.
Well Name/Number: Sidney No. 1-2021H
Location: SW SW Section 20 T26N R53E
County: Richland, MT; **Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 30-40 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick drilling rig to drill a single lateral horizontal Bakken Formation well, 19,034' MD/9030' TVD.

Possible H2S gas production: Slight possibility of H2S from Mississippian Formations.

In/near Class I air quality area: Closest Class I air quality area is the Fort Peck Indian Reservation, about 8.5 miles to the northwest from this location.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under rule 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: If there are existing pipelines for natural gas in the area then associated gas must be tied into a gathering system or if there isn't a gathering system nearby, associated gas can be flared under Board Rule 36.22.1220. This is a single lateral, 19,034' MD/9030' TVD, Bakken Formation horizontal well.

Water Quality

(possible concerns)

Salt/oil based mud: Yes to long string hole will be drilled with oil based invert drilling fluids. Horizontal section to be drilled with oil based invert drilling fluids. Surface casing hole will be drilled with freshwater and freshwater mud.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainages are about 3/8 of a mile to the southwest is an unnamed ephemeral tributary drainage to West Charlie Creek and about 1/4 of a mile to the southeast is West Charlie Creek.

Water well contamination: No, closest water wells are about 1/4 of a mile to the north, about 1/2 of a mile to the northeast, about 3/4 of a mile to the west and 3/4 of a mile to the north from this location. Depth of these stock and domestic water wells range from 35; to 223'. Surface casing will be drilled to and steel surface casing set and cemented from 2487' to surface.

Porous/permeable soils: No, silty sandy clay soils.

Class I stream drainage No, Class I stream drainages in the area of review.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☒ Closed mud system

☒ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 2,487' surface casing well below freshwater zones in adjacent water wells, also, covering the Fox Hills aquifer. Surface hole will be drilled with freshwater and freshwater drilling fluids. Surface casing will be cemented to surface from 2487'.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated, crossing many ephemeral drainages.

High erosion potential: Yes, high erosion potential on cut and fill slopes, moderate cut, up to 18.8' and moderate fill, up to 14.1' required.

Loss of soil productivity: Slight, location to be restored after drilling well if well is nonproductive. If productive unused portion of wellsite will be reclaimed.

Unusually large wellsite: No, large well site 450'X330' for a single well location.

Damage to improvements: Slight, surface use appears to be cultivated land.

Conflict with existing land use/valuesA: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other _____

Comments: Access will be off existing county road #315. About 6,477' of new road will be constructed from the county road into this location. Closed loop mud system will be used in conjunction with a lined cuttings pit and two small pits, drill out pit and flow back pit. Oil based drilling fluids will be recycled. Completion fluids will be trucked to a Class II SWD. Cuttings pit will be allowed to dry and then backfilled with a minimum of 4' of cover over the top of the cuttings. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Nearest residence are about 1/4 of a mile to the north, about 3/8 of a mile to the north and about 1/2 of a mile to the northeast from this location.

Possibility of H2S Slight chance of H2S from Mississippian Formations.

Size of rig/length of drilling time: Triple derrick drilling rig 30 to 40 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☒ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing cemented to surface (2487') with working BOP stack(5,000 psig double ram and annular) should mitigate any problems. Noise should not be a problems, sufficient distance from residence to rig should mitigate this.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No.

Conflict with game range/refuge management: No.

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH tracker website lists no species of concern in this Township and Range.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: No concerns on private surface cultivated land. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: Private surface cultivated lands. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns

Remarks or Special Concerns for this site

19,034'MD/9030'TVD single lateral horizontal Bakken formation test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected with the drilling of this well. Some short term impacts will occur with the drilling of this well.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki

(title:) Chief Field Inspector

Date: May 30, 2012

Other Persons Contacted:

(Name and Agency)

Montana Bureau of Mines and Geology, Groundwater Information Center website.

(subject discussed)

Water wells in Richland County

(date)

May 30, 2012

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Richland County

(subject discussed)

May 30, 2012

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T26N R53E

(subject discussed)

May 30, 2012

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____